

Airstrip Turf Development

Seedbed Preparation

Grasses need plant food, and more airport turf is probably in poor condition from lack of fertilizer than any other cause. The best time to apply fertilizer is in the fall because it insures good growth late in the season and also insures a vigorous growth in the spring. If fertilizer can not be applied in the fall, it should be used as early in the spring as possible.

A good seedbed is essential for obtaining good stands. Small seedlings are unable to survive on dry, cloddy, loose soil. Our recommendations are to go over the full width and length of both the ramp and runway surface with a disc (a disc tends to pack the soil). Also the disc will cut up the roots of the existing bunch grass. Depending on how it looks after the first discing, you should probably disc again in a direction perpendicular to the first direction. The object is to work the ground until all the old grass is cut up and a mellow, firm seedbed is attained.

You are now ready to apply the fertilizer at the rate determined by the soil analysis. A soil analysis should be considered a must and should be a sample representing the entire area. This is best done by using a shovel at several different locations in the field, taking a narrow slice of soil, and placing it in a bucket. Do this at five or six different places and mix the soil thoroughly. Take a one or two pound sample to either your soil conservation office or to your county extension agent for analysis. Apply the fertilizer and work it in the soil by further discing. Finish by cross dragging to get a smooth, level surface.

Seeding

The MDT Aeronautics Division recommends the following types of seed:

1. Sodar Streambank Wheatgrass

This grass has proven itself over time and is available at various retail seed outlets throughout the state. An informational sheet about this is located at the rear of this guide.

2. Sheep Fescue Seed

This seed has been reportedly used regularly by private airstrip owners on their own airstrips. It is an 80% mix of S-21 seed and 20% mix of MX-86 seed. It's recommended application is 150lbs. per acre.

It is always advisable to seed in the fall since less moisture is needed for the seed in the cool Autumn air. Broadcasting seed is definitely preferred to a drill as a drill often cannot maintain an even depth. Be sure an experienced individual is employed to seed the airport since experience shows that some airstrips have too much grass in one area and not enough grass elsewhere. Proper seeding is vitally important since any amount of money can be spent on grading, fertilizing, and preparation; however, if the seed is not sown properly an uneven turf will result. For the final operation, use a packer to compact the soil and embed the seed into the soil at a depth recommended by the seed company. If a careful job is done, it will not be

necessary to cross-pack as one direction is sufficient and considered generally better since the small furrows resulting from proper packing will hold moisture.

Final finishing of the ramp and runway should be accomplished by the use of a roller to lightly pack the surfaces. This will help prevent erosion of the seedbed from both wind and water. From the beginning of reconstruction, it is necessary to close the airport; and, it's best for the airport to remain closed until the ground freezes for Winter. In the Spring, it is best to ensure that very limited traffic use the airport surfaces to give all the seedlings the best chance for survival.

Costs

The following are costs based in 1990 figures for a runway of 3750' by 75'. The apron is figured at 260' by 230'. The total square footage would then be 341,050 square feet, or approximately 7.9 acres. It is not usually necessary to seed the entire airport property. The following costs may change somewhat based on soil analysis and/or the seed application rate recommended by the seed vendor.

Fertilizer @ 180 lbs/acre @ \$275/ton=	\$196
Seed @ 13.5 lbs/acre @ \$6/lb=	\$640
Total=	\$836

This total does not take any other factors into consideration like labor, equipment, etc...

Maintenance

Fertilizer should be continued from time to time and, at a minimum, should be accomplished again in the Spring. Again, the seed company vendor should be able to recommend suitable application rates and mixtures. When using any kind of commercial fertilizer, it is always desirable to apply just before rain is expected or during rainy weather to prevent burning.

Keep runways clipped from about 2 ½ to 4 inches. Cut as necessary, leaving the outfield longer for protection and to discourage landing elsewhere than the runway.

Resources

For further information regarding turf strip development, any farming or seed vendor should be able to give complete guidance from start to finish. The MDT Aeronautics Division is pleased to provide you with this material and may have additional information available. To contact the Division, please feel free to contact us at the following address:

**MDT Aeronautics Division
PO Box 200507
Helena, MT 59620
Phone: (406)444-2506
www.mdt.mt.gov/aviation**